News from the
Savannah River National Laboratory

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SRNL's RAGAIY ZIDAN HONORED FOR INNOVATIVE RESEARCH

AIKEN, S.C. (June 30, 2010) – Research that is expected to accelerate the development of a whole class of hydrogen storage materials has earned the Savannah River National Laboratory's Dr. Ragaiy Zidan a U.S. Department of Energy Hydrogen Program Team Award.

The award was presented at an audience of nearly 1,000, by the DOE Office of Energy Efficiency and Renewable Energy at its Annual Merit Review and Peer Evaluation Meeting for hydrogen, fuel cells and advanced vehicle technologies including batteries and related research. Each year, this meeting showcases projects funded by DOE. As part of the annual meeting, DOE presents awards for outstanding contributions, technical accomplishments and innovative research and development.

Dr. Zidan was honored for his contributions in developing electrochemical methods for alane regeneration. He was lead researcher on an SRNL project team that developed a novel closed cycle for producing the high capacity hydrogen storage material.

For years, one of the major obstacles to widespread commercialization of hydrogen and fuel cell technologies has been hydrogen storage. Solid-state storage, using solid materials such as metals that absorb hydrogen and release it as needed, has many advantages over storing hydrogen as a liquid or gas, and many storage materials have been examined trying to meet DOE's technical targets. A combination of aluminum and hydrogen called aluminum hydride, also known as alane, possesses desired qualities as a storage material, but has been considered impractical because of the high pressures required to combine hydrogen and aluminum to re-form the hydride material after the hydrogen has been released. Alternate methods of production using chemical synthesis have typically produced stable metal chloride byproducts that make it practically impossible to regenerate the alane. The electrochemical cycle demonstrated by Dr. Zidan and the SRNL team for production of alane avoids both of these issues and provides an innovative promising option for further research and development.

Dr. Zidan came to SRNL in 2000 from the University of Hawaii. Since that time, he has led both basic science and applied research projects to advance the practicality of hydrogen as an energy alternative.

SRNL is DOE's applied research and development national laboratory at SRS. SRNL puts science to work to support DOE and the nation in the areas of environmental management, national and homeland security, and energy security. The management and operating contractor for SRS and SRNL is Savannah River Nuclear Solutions, LLC.

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